Report on Gear Drive

By

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Description –

A **gear** is rotating machine part having cut teeth which mesh with another toothed part to transmit torque. Geared devices can change the speed, torque, and direction of a power source.

Gear reduction ratio-

For a Geared mechanism, gear reduction ratio is ratio of the number of teeths on the pinion to the number of teeths on the gear.

A gear reduction mechanism reduces the speed of the driven shaft to that of the driving shaft. This is usually employed in the systems where higher operating torques are required, at the expense of loss of speed.

The highest amount of gear reduction is obtained using worm and worm wheel mechanisms.

gear reduction ratio=(speed of driven)/(speed of driver).

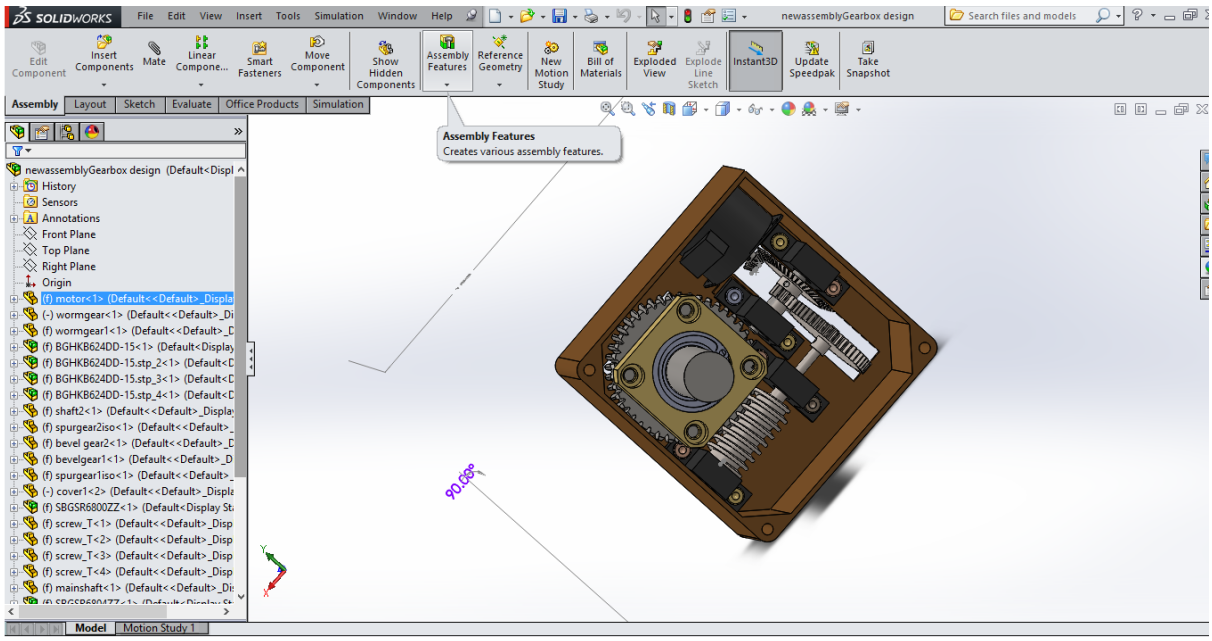
Components- Motor, straight bevel gear, worm gear, spur gear, shaft, cover, bearing, bolts.

Material and dimensions of different components can be selected according to requirements.

Design concept:

a. In gear drive train system, I chosen worm gear, spur and straight bevel gear.

1. **Worm gear** provides major reduction ratio -44
2. **Spur provides** 4 reduction ratio
3. **Straight bevel gear** provides 4 reduction ratio and easy assemble.
4. Total gear reduction ratio-704



High reduction ratio gear system(worm gear, spur and straight bevel gear)